

**Abstract**

Methods and apparatus are provided for controlling the dose uniformity of ions implanted into a workpiece in a plasma doping system. The plasma doping system includes a plasma doping chamber containing a platen for supporting a workpiece and an anode spaced from the platen. Dose uniformity may be improved by rotating the wafer to average azimuthal variations. Magnetic elements may be positioned around the plasma discharge region to control the radial density distribution of the plasma. The anode may have a spacing from the workpiece that varies over the area of the anode. The anode may include anode elements that are individually adjustable.